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PMC-ND
(1.08.09.13)

U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION



RECIPIENT: Ardica Technologies

STATE: CA

PROJECT TITLE : Low Cost Alpha Alane for Hydrogen Storage

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000827	DE-EE0006629	GFO-0006629-001	GO6629

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

B3.6 Small-scale research and development, laboratory operations, and pilot projects Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.

A9 Information gathering, analysis, and dissemination Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Ardica Technologies to reduce the production cost of alpha-alane (AlH₃) by developing and demonstrating an electrochemical process to synthesize it in an effort to reduce production costs associated with alane-based hydrogen storage.

The proposed project would perform process modeling and economic analysis to demonstrate an ability to meet cost targets; develop and demonstrate the electrochemical process; develop and demonstrate the downstream processing to convert an alane adduct to alpha-alane; and demonstrate and test alpha-alane in a hydrogen storage system.

The proposed project would take place at Ardica facilities located at 2325 3rd street, suite 424, San Francisco, CA 94197 and at SRI International's (SRI) laboratory located at 333 Ravenswood Ave, Menlo Park, CA 94025. These facilities currently conduct experiments similar to the work being proposed by this project, therefore, no facilities modification or new or modified permits would be required. To accomplish the lab-scale R&D objectives, less than 6 kg each of Sodium Aluminum Hydride (NaAlH₄), Toluene, Aluminum powder, bulk aluminum and bulk hydrogen would be utilized. It is expected that the proposed project would produce/ship gram quantities from SRI to Ardica for testing in fuel cells, and materials would be transported by standard air or surface Hazardous Material procedures. There would be small amounts of hydrogen, toluene solvent vapor and hydrochloride acid vapor that would be vented by handling these chemicals in a chemistry laboratory fume hood. The proposed project is not expected to produce significant amounts of toxic emissions or waste and any waste produced would be disposed of according to local, state and federal regulations.

Based on review of the project information and the above analysis, DOE has determined the analysis, research, development and testing activities would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined the proposed project is consistent with actions contained in DOE categorical exclusions A9 "information gathering, analysis, and dissemination" and B3.6 "small-scale research and development, laboratory operations and pilot projects," and is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Note to Specialist :

Review completed by Logan Sholar on 07/17/14.

This NEPA Determination does not require a tailored NEPA provision.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION

NEPA Compliance Officer Signature:  Electronically Signed By: Kristin Kerwin  Date: 7/23/2014
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____
Field Office Manager